

REMARKS

Claims 37, 41, 42, 45-50, 53-55, 58-62, 71 and 72 are presently pending in the Application.

The Examiner objects to claims 37, 41, 42, 47, 48, 55, 59 and 71 for informalities therein as indicated in the present Official Action. In response, the claims are amended to address and overcome the stated grounds for objection and the Applicant respectfully requests that the Examiner reconsider and withdraw all objections to the claims. In particular, the entered claim amendments are directed solely at overcoming the raised informality objections and are not directed at distinguishing the present invention from the art of record in this case and do not add any new matter to or alter the subject matter of the invention, the specification, the drawings or the claims.

Claim 57 is rejected, under 35 U.S.C. § 102(b), over Stelzmuller et al. '065 (U.S. Patent No. 5,731,065), claims 37, 41, 42, 45, 48-50, 53, 54, 58-62, 64 and 71 are rejected, under 35 U.S.C. § 103(a), over Stelzmuller et al. '065 in view of Jones et al. '078 (U.S. Patent No. 4,932,078), and claims 46, 47 and 55 are rejected, under 35 U.S.C. § 103(a), over Stelzmuller et al. '065 and Jones et al. '078 in view of Nomi '806 (U.S. Patent No. 5,190,806). The Applicant acknowledges and respectfully traverses the raised rejections over the cited prior art in view of the following remarks.

First considering the present invention as recited in the claims, it will be noted that the claims are amended herein above to more explicitly recite the distinctions between the present invention and the cited prior art. It will be noted, however, that these amendments to the claims are fully supported by the specification, the drawings and the claims, as originally filed, and that the amendments do not add any new matter to or alter the subject matter of the invention, the specification, the drawings or the claims.

Now considering the present invention as generally recited in independent claims 37, 47, 48 and 72 and thereby in each respective dependent claims, the present invention is directed to a lower leg protective apparel, that is, a sock, for providing protection from chemical or biological noxiants. As recited in the claims, the lower leg protective apparel of the present invention includes an outersock 1 and a laminate 2 disposed on an inner side of the outersock 1. The laminate 2 includes a single flexible, windproof, breathable and water-rejecting membrane 7 which forms the outer surface of the laminate 2 and which forms at least a barrier to biological noxiants and at least a partial barrier to liquid chemical noxiants, a single carbon layer 8 which is disposed underneath the membrane 7 and which comprises carbon in a fibrous form, and a single inner textile ply layer 9.

The lower leg protective apparel may also include an innersock 3 disposed as a second textile ply on an inner side of the laminate 2 and at least one of the outersock 1 and the innersock 3 may be fabricated from a plurality of cuts 4, 5, 6 with the seams between the cuts 4, 5, 6 being sealed by a seam-sealing tape comprising a waterproof material and the outersock 1, the laminate 2 and the innersock 3 are bonded to one another as a single unit.

Turning now to applied art, Stelzmuller et al. '065 relates to and describes a multilayered, textile based, gas-permeable filter material for use in protective suits to provide protection against toxic chemical substances. As described by Stelzmuller et al. '065, a first embodiment of the material includes four layers wherein the first layer 1 which is a support layer comprised of a woven textile; a second layer 2 which is a gas-permeable adhesive layer that is bonded to the first layer 1 and comprises a fiber or fabric or a perforated foil for blocking liquids and solids but passing water vapor; a third layer 3 that is bonded to the second layer 2 and comprises a textile containing activated carbon fibers as an absorbent layer; and a fourth layer 4 which is bonded to the third layer 3 and functions as a cover layer and comprises the same material as the second layer 2, that is, a gas-permeable adhesive fiber, fabric or foil for blocking noxious liquids and solids but passing water vapor.

A second embodiment, described by Stelzmuller et al. '065, includes six layers that include: (a) first layer comprising a warp knit fabric support layer 1a generally similar to the first layer 1 of the first embodiment; (b) second layer comprising a membrane layer 2a formed of a hydrophilic polyurethane bonded to the support layer 1a and generally similar to the gas-permeable second layer 2 of the first embodiment, that is, it comprises a layer for blocking noxious liquids and solids but passes water vapor; (c) a third layer comprising a foam layer 3a that is bonded to the second layer 2a; (d) a fourth layer comprising a carbonized wove fabric acting as an absorbent layer; (e) a fifth layer comprising a hydrophilic adhesive coating layer 5a; and a sixth layer comprising a cover layer 6a form of a woven fabric.

It is therefore apparent that there are a number of fundamental differences and distinctions between the present invention as recited in the claims and the embodiments for a protective material as described in Stelzmuller et al. '065. For example, in the instance of the first embodiment of Stelzmuller et al. '065, the second and fourth layers of the Stelzmuller et al. '065 material comprise a gas-permeable adhesive fiber, fabric or foil for blocking noxious liquids and solids but passing water vapor. In complete contrast from the teachings, suggestions and disclosures of Stelzmuller et al. '065—and assuming solely for purposes of discussion that the outersock 1 layer of the present invention may be regarded as corresponding in some manner to the first fabric layer 1 of the the Stelzmuller et al. '065

material rather than a separate layer, with which the Applicant does not concur—the material of the present invention contains only single layer of a gas-permeable material, that is, the second layer, and includes a single layer of textile material instead of the second layer of gas-permeable adhesive fiber, fabric or foil as specifically taught by Stelzmuller et al. '065.

In this regard, it must be noted that Stelzmuller et al. '065 apparently believes that a second, additional layer of gas-permeable adhesive fiber, fabric or foil is necessary to provide adequate protection against noxious liquids and gases. The present invention, however, as described in the pending specification, teaches that a single layer of gas-permeable but liquid tight material is sufficient as an noxious elements penetrating the single layer of gas-permeable material will be absorbed in the single carbon layer 8 which is disposed underneath the membrane 7.

It is therefore apparent that the presently claimed invention is completely and patentably distinguished over and from the teachings, suggestions, disclosures and hints of Stelzmuller et al. '065 with regard to the first embodiment of Stelzmuller et al. '065 under the requirements and provisions of 35 U.S.C. 103, or alternatively under 35 U.S.C. 102, for at least the above reasons, as well as for further reasons discussed below.

The present invention is even more fundamentally distinguished from the teachings, suggestions, disclosures and/or hints of Stelzmuller et al. '065, in the instance of the second, six layer embodiment taught by Stelzmuller et al. '065. For example, Stelzmuller et al. '065 teaches that this embodiment includes (a) first layer comprising a warp knit fabric support layer 1a generally similar to the first layer 1 of the first embodiment, (b) second layer comprising a membrane layer 2a formed of a hydrophilic polyurethane bonded to the support layer 1a and generally similar to the gas-permeable second layer 2 of the first embodiment, that is, it comprises a layer for blocking noxious liquids and solids but passing water vapor, (c) a third layer comprising a foam layer 3a that is bonded to the second layer 2a, (d) a fourth layer comprising a carbonized wove fabric acting as an absorbent layer, (e) a fifth layer comprising a hydrophilic adhesive coating layer 5a, similar to or the same as the second layer 2a, and a sixth layer comprising a cover layer 6a form of a woven fabric.

In complete contrast from this embodiment of the Stelzmuller et al. '065 material, the presently claimed invention includes only a three layer laminate 7 comprising a single breathable and water-rejecting membrane 7, a single carbon layer 8 and a single inner textile ply layer 9, an outersock 1 and, in at least some implementations, an innersock 3, and the outersock 1 and the innersock 3, if any, are constructed separately from the three layer laminate 2.

That is, and assuming solely for purposes of discussion that the outersock 1 and innersock 3 of the present invention may be regarded as corresponding in some manner to the first fabric layer 1, a fifth layer comprising a hydrophilic adhesive coating layer 5a similar to or the same as the second layer 2a and sixth fabric layer 6a of the Stelzmuller et al. '065 material, with which the Applicant does not concur, the present invention does not include a third layer comprising a foam layer 3a that is bonded to the second layer 2a or a fifth layer comprising a hydrophilic adhesive coating layer 5a, similar to the second layer 2a.

Again, and fundamental distinction between the present invention and the teachings, suggestions, disclosures, motivations and hints of Stelzmuller et al. '065, the presently claimed invention does not include a second gas-permeable layer, as discussed above with regard to the first embodiment, and further the carbonized layer is bonded directly to the gas-permeable layer rather than to a foam layer interposed between the carbonized layer and the gas-permeable layer.

It is therefore apparent that the present invention, as recited in the presently pending claims, is completely and patentably distinguished over and from the teachings, suggestions, disclosures and hints of Stelzmuller et al. '065, with regard to the second embodiment of Stelzmuller et al. '065, under the requirements and provisions of 35 U.S.C. 103, or alternatively under 35 U.S.C. 102, and for at least the above reasons, as well as for further reasons discussed below.

In further fundamental distinction between the present invention and the teachings, suggestions, disclosures and hints of Stelzmuller et al. '065 with regard to both the first and second embodiments of Stelzmuller et al. '065, it must be noted that Stelzmuller et al. '065 describes at least both layers of gas-permeable material as being essentially layers of adhesive material that happen to be gas-permeable, and that others of the layers function as adhesive layers as well as whatever other functions they may perform. In complete contrast from the teachings, suggestions, disclosures and hints of Stelzmuller et al. '065, the layer of gas-permeable material in the present invention is not an adhesive material but is instead solely a single breathable and water-rejecting membrane 7 and the adhesive layers, if any, are separate from and are applied separately from the single gas-permeable membrane 7, the single carbon layer 8 and the single inner textile ply layer 9.

Further in this regard, the three laminate layers of the present invention, that is, the a single breathable and water-rejecting membrane 7, the single carbon layer 8 and the single inner textile ply layer 9 may, in fact, be assembled by stitching rather than be adhesive, thereby

comprising a further fundamental distinction and difference between the present invention and the teachings of Stelzmuller et al. '065.

In further contrast from the present invention, Stelzmuller et al. '065 teaches, suggests, discloses and hints that the layers of material—whether the four layers of the first embodiment or the six layers of the second embodiment—must be bonded together into a single assembly by adhesives in or between the layers. In complete contrast, and in still further fundamental distinction between the present invention and the teachings of Stelzmuller et al. '065, the lower leg protective apparel of the present invention includes a three layer laminate 7 comprising a single breathable and water-rejecting membrane 7, a single carbon layer 8 and a single inner textile ply layer 9, an outersock 1 and, in at least some implementations, an innersock 3 wherein the outersock 1 and the innersock 3, if any, are constructed separately from the three layer laminate 2. The present invention therefore allows greater flexibility in construction and use of the lower leg protective apparel whereas the Stelzmuller et al. '065 material can be used and worn only as a composite material containing all of the described layers.

It is therefore apparent that for at least the reasons discussed above the present invention, as recited in independent claims 37, 47, 48 and 72 and thereby in all dependent claims by dependency therefrom, is completely and patentably distinguished over and from the teachings, suggestions, disclosures and hints of Stelzmuller et al. '065 with regard to both the first and second embodiment of Stelzmuller et al. '065 under the requirements and provisions of 35 U.S.C. 103 or 35 U.S.C. 102. In view of the above, the Applicant therefore respectfully requests that the Examiner reconsider and withdraw all rejections of independent claims 37, 47, 48 and 72, as well as all claims dependent therefrom, in view of Stelzmuller et al. '065 under either 35 U.S.C. 103 and 35 U.S.C. 102.

Next considering Jones et al. '078, the Examiner cites Jones et al. '078 in combination with Stelzmuller et al. '065 in rejecting claims 37, 41, 42, 45, 48-50, 53, 54, 58-62, 64 and 71, with Stelzmuller et al. '065 being cited as the base reference, discussed above, and Jones et al. '078 being cited as teaching the assembly of protective garments by stitching, as recited in claims 37, 41, 42, 45, 48-50, 53, 54, 58-62, 64.

As discussed above, independent claims 37, 47, 48 and 72 all recite the elements and limitations discussed above, as do all claims dependent from claims 37, 47, 48 and 72, including claims 41, 42, 45, 48-50, 53, 54, 58-62, 64. It is also apparent that the materials and garments described by Jones et al. '078 are completely and fundamentally unrelated to and do not teach or suggest any of the above discussed limitations regarding the laminate 2, outersock 1 and innersock 3 of the present invention, with which the Examiner apparently concurs in the

Official Action, so that Jones et al. '078 thereby does not and cannot compensate for or overcome the deficiencies in the teachings of Stelzmuller et al. '065.

It is therefore the Applicant's position that, for the reasons discussed above with regard to independent claims 37, 47, 48 and 72, neither Stelzmuller et al. '065, nor Jones et al. '078, nor Jones et al. '078 in combination with Stelzmuller et al. '065 in any way teaches, suggests, discloses or remotely hints at the present invention, as recited in independent claims 37, 47, 48 and 72 and any claims dependent thereon, to those of ordinary skill in the relevant arts under the requirements and provisions of 35 U.S.C. 103. The Applicant therefore respectfully requests that the Examiner reconsider and withdraw all rejections of claims 37, 41, 42, 45, 48-50, 53, 54, 58-62, 64 and 71, under 35 U.S.C. 103, over Stelzmuller et al. '065 in view of Jones et al. '078, and allow claims 37, 41, 42, 45, 48-50, 53, 54, 58-62, 64 and 71 as presented herein above.

Finally considering Nomi '806 and the rejection of claims 46, 47 and 55, under 35 U.S.C. § 103, over Stelzmuller et al. '065 and Jones et al. '078 in view of Nomi '806, the Examiner cites Nomi '806 with respect to the specific form of membrane materials recited in claims 46, 47 and 55. As discussed above, independent claims 37, 47, 48 and 72 all recite the elements and limitations discussed above with regard to claim 72, as do all claims dependent from claims 37, 47, 48 and 72, including claims 46 and 55.

It is also apparent that with the exception of certain materials used therein, the assemblies of materials and garments, described by Nomi '806, are completely and fundamentally unrelated to and do not in any way teach, suggest or disclose any of the above discussed limitations regarding the laminate 2, the outersock 1 and the innersock 3 of the present invention—with which the Examiner apparently concurs in the Official Action—so that Nomi '806 thereby does not and cannot compensate for the deficiencies in the teachings of Stelzmuller et al. '065 and/or Jones et al. '078 and thus the combined teachings of Stelzmuller et al. '065, Jones et al. '078 and/or Nomi '806 still fails to render obvious the presently claimed invention.

It is therefore the Applicant's position that, for the reasons discussed above with regard to independent claims 37, 47, 48 and 72, neither Stelzmuller et al. '065 nor Jones et al. '078 nor Nomi '806, nor any permissible combination of Stelzmuller et al. '065, Jones et al. '078 and/or 8 Nomi '806, can or does teach, suggest, disclose or remotely hint at the present invention, as recited in independent claims 37, 47, 48 and 72 on in any of the claims dependent thereon, to those of ordinary skill in the relevant arts under the requirements and provisions of 35 U.S.C. 103. The Applicant therefore respectfully requests that the Examiner reconsider and

withdraw all rejections of claims 46, 37 and 55, under 35 U.S.C. 103, over Stelzmuller et al. '065, Jones et al. '078 and Nomi '806 and all permissible combinations of Stelzmuller et al. '065, Jones et al. '078 and/or Nomi '806, and allow claims 46, 47 and 55 as presented herein above.

If any further amendment to this application is believed necessary to advance prosecution and place this case in allowable form, the Examiner is courteously solicited to contact the undersigned representative of the Applicant to discuss the same.

In view of the above amendments and remarks, it is respectfully submitted that all of the raised rejection(s) should be withdrawn at this time. If the Examiner disagrees with the Applicant's view concerning the withdrawal of the outstanding rejection(s) or applicability of the Stelzmuller et al. '065, Jones et al. '078 and/or Nomi '806 references, the Applicant respectfully requests the Examiner to indicate the specific passage or passages, or the drawing or drawings, which contain the necessary teaching, suggestion and/or disclosure required by case law. As such teaching, suggestion and/or disclosure is not present in the applied references, the raised rejection should be withdrawn at this time. Alternatively, if the Examiner is relying on his/her expertise in this field, the Applicant respectfully requests the Examiner to enter an affidavit substantiating the Examiner's position so that suitable contradictory evidence can be entered in this case by the Applicant.

In view of the foregoing, it is respectfully submitted that the raised rejection(s) should be withdrawn and this application is now placed in a condition for allowance. Action to that end, in the form of an early Notice of Allowance, is courteously solicited by the Applicant at this time.

The Applicant respectfully requests that any outstanding objection(s) or requirement(s), as to the form of this application, be held in abeyance until allowable subject matter is indicated for this case.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,


Michael J. Bujold, Reg. No. 32,018

Customer No. 020210

Davis & Bujold, P.L.L.C.

112 Pleasant Street

Concord, NH 03301-2931

Telephone 603-226-7490

Facsimile 603-226-7499

E-mail: patent@davisandbujold.com